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## EUROPEAN PATENT APPLICATION

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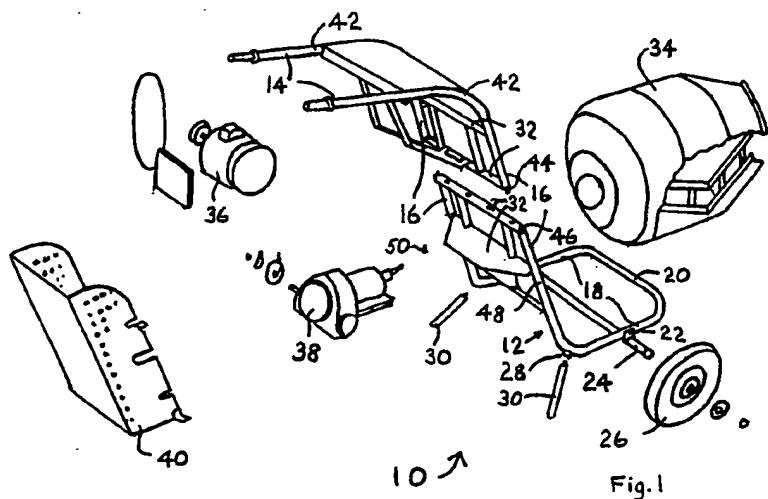
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### ⑭ Dismantleable concrete mixer.

⑭ The mixer (10) has a frame with a generally U-shaped outer frame assembly (12). The end portions (14) of the limbs extend horizontally to provide hand-grips, and lead to downwardly extending side pieces (16) that are straddled by struts (32) to which the rotatable drum (34) and its drive (36, 38) are mounted. At the bottom, the side pieces (16) are connected by a portion (18, 20) that extends forwardly,

beneath the drum (34). It has wheels (26) journalled at the front, and bears ground engaging legs (30) at the rear. For compact storage, the frame assembly (12) comes apart, each side piece (16) being separable at a spigot/socket joint (44,46). The bottom portion (18, 20) may also be separable into lateral halves.



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The present invention relates to a dismantlable mixer for concrete, cement or the like, hereafter referred to as a concrete mixer; and to a frame therefor. It particularly relates to a concrete mixer which can be packed into a small space before assembly for use. It may or may not be intended to be dismantled thereafter.

The invention is primarily concerned with a mixer having a barrow-type frame and with such a frame. That is, the frame has a lower ground-engaging portion, usually provided with one or more forward wheels, and one or more rearward ground-engaging limbs with or without wheels. A mounting portion extends upwardly from the ground-engaging portion, and bears a rotatable drum, generally projecting above the ground-engaging portion. The mounting portion leads to handgrip means by which the mixer is tiltable and may be transported. GB-A-2 214 100 Sanders discloses a mixer of barrow-type having a frame which is a continuous length of tubular steel that was first formed into a U-shape, then portions were angled to give, in side elevation, stepped profile. Rear leg portions were welded to the frame. The result is a frame that requires a very large case for packing. GB-A-2 187 395 Hanlon et al also discloses a barrow-type mixer with a permanent frame of even bulkier design. GB-A-2 040 176 Moser et al discloses a barrow-type mixer of rather complex form, having a frame formed of many parts. However the main side pieces, extending from ground engaging limbs to the handgrip means, are unitary members. GB-A-2 027 602 Kober and GB-A-2 181 069 Bishop disclose mixers having multi-part frames, but not of barrow-type.

According to the invention, the frame is separable into at least two parts each comprising part of the mounting portion and either the ground-engaging portion or the handgrip means. At least the lower part may be further separable into two lateral moieties.

An embodiment of the invention will now be described in greater detail with reference to the accompanying drawing which is a schematic exploded perspective view thereof.

The illustrated mixer 10 has a barrow-type frame including a bent tubular frame member 12 which is symmetrical about a vertical plane and provides at each side an upper handgrip portion 14, a downwardly and slightly forwardly extending mounting portion 16, and a support for ground engaging means including a side support portion 18, the two of these being joined at the front by a front support portion 20. The support portions 18, 20 are in a horizontally extending plane. Near the front, the side support portions 18 carry brackets 22 for an axle 24 for wheels 26. Adjacent the boundary between the mounting portions 16 and

the side support portions 18, there are threaded sockets 28 for legs 30.

The two mounting portions 16 are bridged by various struts 32. These enable a drum 34 to be mounted at the front and a motor 36 and gearbox 38 for rotating the drum to be mounted at the rear and shielded by a guard 40.

Conventionally, the frame member 12 is unitary. However, the illustrated member 12 is in three parts separable at an intermediate region of the mounting portions 16. The two upper components 42 may be retained together by various of the struts 32. In this example, the upper components 42 terminate in spigots 44 receivable in sockets 46 at the top of the lower component 48. Furthermore their connection brings two struts 32 together face to face. These struts have apertures for bolts 50 for holding the frame member 12 together.

Since the frame member 12 comes apart, the mixer can be packed into a much smaller volume than with other designs. For even greater compactness, the lateral sides of the lower component may also be separable. Thus the front support portion 20 may have a spigot and socket joint in an intermediate region. The wheels 26 and/or the axle 24 may be readily removable. Of course, the struts 32 connecting the two sides must be separable from at least one side. The upper components 42 may also be separable from one another.

### Claims

1. A concrete mixer (10) having a rotatable drum (34) and a barrow-type frame (12), the frame having: a lower portion (18, 20) providing ground engaging means (26, 30); an intermediate mounting portion (16) extending upwardly from the lower portion (18, 20) and arranged to carry the rotatable drum (34) so that this projects over the lower portion (18, 20); and handgrip means (14) connected to the mounting portion (16) remote from the lower portion (18, 20); characterised in that the frame is separable into at least two parts (42, 48) each comprising part of the mounting portion (16) and either the lower portion (18, 20) or the handgrip means (14).
2. A concrete mixer according to claim 1 wherein the part (48) which includes the lower portion (18, 20) is separable into two lateral moieties.
3. A concrete mixer according to claim 1 or claim 2 wherein the frame comprises a generally U-shaped outer frame assembly (12), whereof the free ends provide the handgrip means (14) and the body is bent so that two downwardly extending parallel limb-portions (42, 48) provide

the mounting portion (16) and they are linked by a portion (18, 20) extending generally in another plane which provides and/or carries the ground engaging means (26, 30).

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4. A concrete mixer according to claim 3 wherein each of said parallel limb-portions (42, 48) is separable into an upper (42) and a lower (48) portion; the upper and lower portions having mutually engageable spigot/socket means (44, 10 46).

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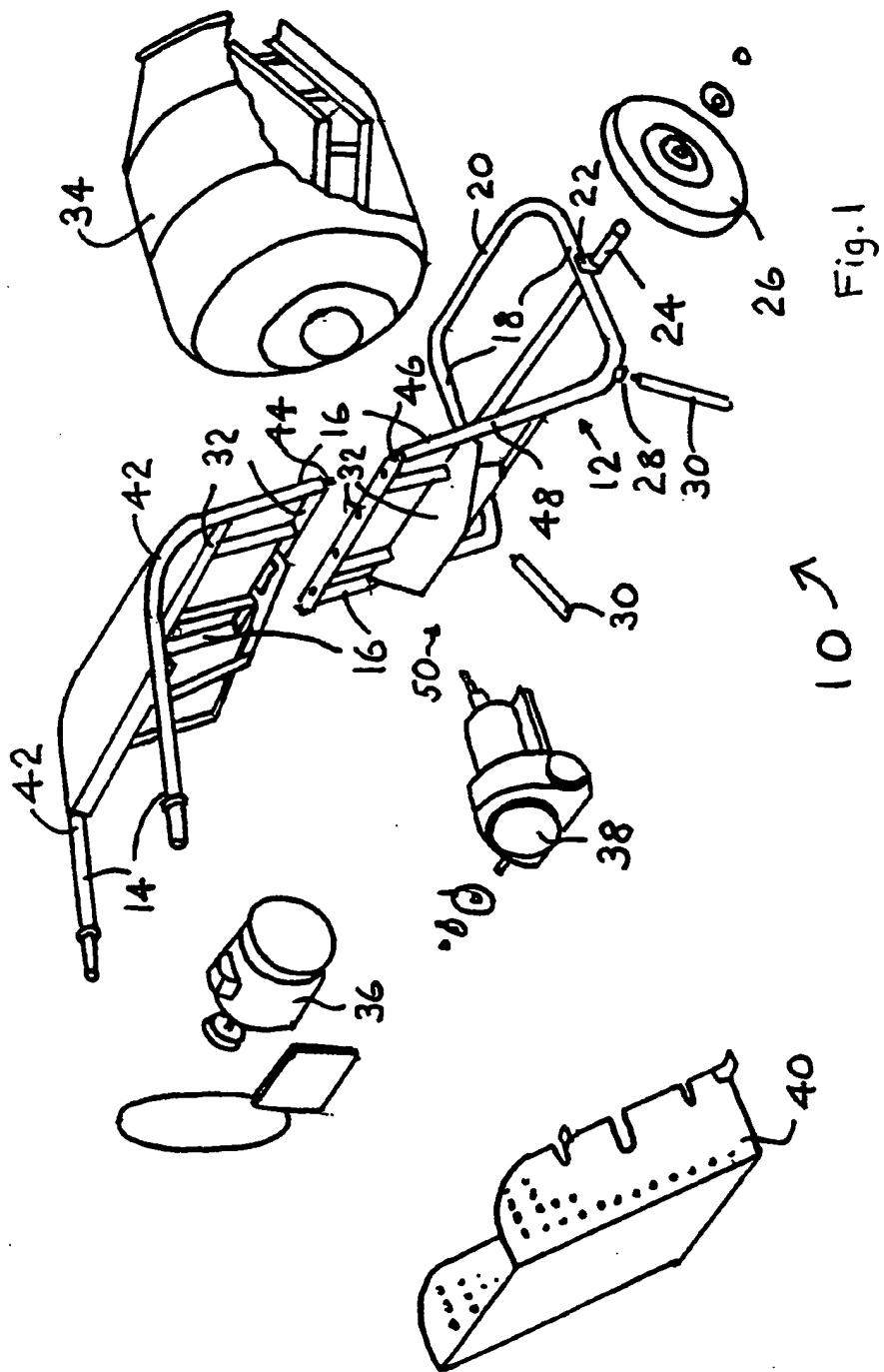
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EUROPEAN SEARCH  
REPORT

Application Number

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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)		
Y	FR-A-1 492 457 (KOBER) * Page 4, abstract points 2,9; fig. *	1-4	B 28 C 5/18		
Y	US-A-4 251 178 (BOURGRAF) * Figure 1; column 3, line 54 - column 4, line 30 *	1-4			
A	US-A-4 223 997 (VIOLET)				
A	US-A-2 944 799 (LARSON)				
A	US-A-1 621 345 (ANDERSON)				
A	US-A-2 452 896 (BONNEY)				
A	US-A-3 241 852 (MULLER)				
A	US-A-1 627 253 (SHANNON)				
A	FR-A-1 244 985 (SAPIN)				
A	FR-A-8 703 71 (SIMON)				
A	GB-A-2 093 410 (YORK)				
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)		
			B 28 C B 62 B		
The present search report has been drawn up for all claims					
Place of search	Date of completion of search	Examiner			
The Hague	23 November 90	PEETERS S.			
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